

because the number of bits (2 or 8) does not change the scope of the invention.

The Examiner characterizes applicants' arguments filed September 13, 1993 as follows: "[T]he applicant argues that Whittington does not teach nor suggest replacing two concurrent signal samples with a sync symbol." The Examiner further states that "Whittington teaches a data link for cellular radio systems which replaces eight consecutive bits with a like number of synchronization bits, and whether it is eight bits or two bits being replaced, the scope of the invention does not change."

The Examiner has misrepresented the teachings of the present invention, and has misstated applicants' characterization of Whittington.

According to the present invention defined in the claims and shown illustratively in Figure 2, an input data stream (DATA IN, having signal samples BYT0 to BYT9) is monitored for the occurrence of two consecutive identical signal samples (e.g., BYT values). Although the signal samples are represented as individual byte values, the signal samples could correspond to any signal representation.

If two consecutive identical samples (e.g., byte values) are found, the second one of the two consecutive identical samples is replaced by a sync symbol. For illustrative purposes regarding Figure 2, consecutive samples BYT3 and BYT4 are taken to be identical, and consecutive samples BYT6 and BYT7 are also considered identical. In accordance with the present invention, the second-occurring identical sample (e.g., BYT4 and BYT7) is replaced by a sync symbol SYNC, producing the output stream (DATA OUT) ready for transmission to a receiving end.

The above discussion clearly illustrates that the present invention does not, as the Examiner asserts, replace a certain number of identical consecutive bits with a like number of sync bits, nor does the present invention insert a sync bit after two consecutive identical bits. Rather, for each instance (if any) of two consecutive identical signal samples in an input data

stream, the present invention operates to replace the second one of the two consecutive identical samples with a SYNC symbol.

At the receiving end according to the present invention, the original input data stream (DATA IN) is perfectly reconstructed by replacing each SYNC symbol in the transmitted data stream with the signal sample (byte value) immediately preceding the SYNC symbol. For example, in Figure 4, the first SYNC symbol is replaced by BYT3 and the second SYNC symbol is replaced by BYT6, thereby completely reproducing the DATA IN sequence of Figure 2 since BYT3 is identical to BYT4 and BYT6 is identical to BYT7.

[In response to the Examiner's characterization of applicants' remarks filed September 13, 1993 that "applicant argues that Whittington does not teach nor suggest replacing two concurrent signal samples with a sync symbol", this is a complete misstatement of applicants' characterization of Whittington. Rather, Whittington neither teaches nor suggests monitoring an input data stream of signal samples (MESSAGES in Whittington) to detect the occurrence, if any, of two consecutive identical signal samples (MESSAGES); and Whittington neither teaches nor suggests that, if such an occurrence is detected, replacing the second one of the two consecutive identical signal samples (MESSAGES) with a sync symbol.]

For purposes of comparison, messages 321 and 331 in Figure 3 of Whittington would correspond to two consecutive signal samples (e.g., BYT values) in the input data stream of the present invention. This basis of comparison is essential to an understanding of how the present invention distinguishes from Whittington since it appears that the Examiner relies upon a teaching of Whittington directed to replacing a certain number of identical consecutive bits with a like number of sync bits; however, this reliance is misplaced since the appropriate comparison concerns how Whittington treats consecutive identical MESSAGES, wherein such MESSAGES correspond to the signal samples (e.g., BYT values) of the present invention and recited in the claims.

In Whittington, synchronization information is inserted into the all "1's" sequence as imbed bits 325 between message 321 and message 331, regardless of whether messages 321 and 331 are identical. However, if the present invention acted upon the data stream 300 in Figure 3 of Whittington, a comparison would be made between consecutive messages 321 and 331 to determine if a match condition existed, namely if messages 321 and 331 are identical. If consecutive messages 321 and 331 are found to be identical, the second-occurring signal sample (e.g., message 331) would be replaced by a SYNC symbol. However, this monitoring of signal samples (e.g., MESSAGES) and replacement of one of the signal samples with a SYNC symbol (if two consecutive identical samples are found), is neither taught nor suggested by Whittington. In particular, Whittington neither teaches nor suggests replacing the second of two consecutive identical signal samples (e.g., MESSAGES in Whittington) with a SYNC symbol.

Applicants respectfully submit that claims 1-7 are patentably distinguishable over Whittington and the other art of record, and request that this rejection be withdrawn.

Applicants believe that the application is in condition for allowance, and respectfully request that such action be taken.

Respectfully submitted,

Victor F. Lohmann, III

Victor F. Lohmann, III
Registration No. 33,951
Agent for Applicants

GTE Telecommunications,
Products & Services
40 Sylvan Road - MS#31
Waltham, MA 02254
(617) 466-4018